Questions and Answers on the Electricity Authority's Wholesale Market Review

Last updated 7 December 2021.
(Previously updated 16 November 2021.)

1. *What new initiatives are proposed in the consultation papers for further investigation or implementation that will lower prices between 2022 and 2024 to those expected in a workably competitive market compared to the status quo policy settings?*

The Authority has released an Information Paper and a Discussion Paper and is consulting on actions or interventions that could be taken to improve outcomes in the wholesale electricity market.[1] The consultation concludes 22 December 2021.

The Information Paper looks at the structure, conduct and performance of the wholesale electricity market from January 2019 until June 2021. The Information Paper seeks to disentangle the causes underlying high electricity prices during this period. We simultaneously released a Discussion Paper, which is the first step in responding to one observation made in the Information Paper about the continued operation of the NZAS smelter at Tiwai. The continued operation of the smelter results in greater demand, more thermal generation and higher prices for other consumers. The Authority is concerned that generators are in effect subsidising the smelter by up to $500m, potentially creating inefficiencies that coincide with higher prices for other consumers.

The Authority is seeking stakeholders' views on both papers. With respect to the Information Paper, the aim is to get interested parties' views on the completeness or otherwise of the indicators used, new evidence to improve our understanding of the performance of wholesale markets, and future workstreams that have the potential to transition red and orange observations into green (see Table 2: Summary of Structure, Conduct and Performance Indicators.) Issues such as economic withholding analysis, unpicking the dummy variable, profit analysis in the Information Paper and modelling the effect of generation investment on generator incentives are all legitimate topics for inclusion in submissions.

At this stage the Authority does not have pre-determined views on interventions or actions that would resolve short-term concerns over the next 2-3 years. The Authority is consulting to inform subsequent decisions.

The options identified in the Discussion Paper are not intended to be an exhaustive response to the wholesale review, rather they are targeted at possible issues raised by inefficient price discrimination which is the "first cab off the rank". The intent is to obtain the views of stakeholders on the materiality of inefficient price discrimination and possible solutions.

The Authority will receive submissions in December 2021, and these will inform advice to the Board in Q1 2022. That advice will encompass the Authority's future work programme in wholesale markets, and possibly any shorter term actions for consultation (over and above those already being considered with respect to inefficient price discrimination) where the Authority believes it has

[1] The two papers can be found on the Authority's website: https://www.ea.govt.nz/monitoring/enquiries-reviews-and-investigations/2021/wholesale-market-competition-review-2/.

sufficient information to consult. Until that time, it would be premature to suggest specific policy proposals that could have the effect of lowering prices in the short term.

Finally, the behavioural responses of generators in reaction to the new trading conduct rules introduced post the review period are still playing out. The Authority will be monitoring these closely, including the implications for the wholesale review's findings and the Authority's future work priorities.

2. *Is the EA planning to continue investigation on this unexplained shift in prices of almost $40/MWh?*

To provide some additional context on the analysis, the dummy variable starts when Pohokura went on outage. We published this analysis in 2020 and considered the dummy to be a proxy for gas supply risk. As it is significant, we considered we had evidence that gas supply risk was affecting the spot price. However, the reviewers pointed out that this dummy could include some exercise of market power. We have tried to identify this, but we have been unable to disentangle these two effects.

The Authority is committed to seeking to better understand what might be driving this change and, to the extent these causes have policy implications, seek to address them. The invitation for stakeholders to provide submissions is the first step in trying to better understand what might be behind the unexplained variation. As discussed, above the work programme and any additional immediate policy responses will be developed post this submissions process. We would welcome any ideas on the drivers of this unexplained shift, and on how we could develop better analytical frameworks to address such issues. Evidence-based submissions on the drivers of this unexplained shift that are supported by data are useful as they allow us to test the drivers in our model.

3. *Has the Authority a view on the GIC recommendations?*

The Authority is still considering the GIC recommendations.

4. *Is the Authority able to provide upper and [lower] bounds for the estimated effect of withholding on wholesale prices in the same way as the Authority did for the Meridian/Tiwai contract?*

The Information Paper presents a series of indicators as a way of drawing a picture about offer behaviour relative to proxy measures of cost. The Information Paper does not conclusively find that economic withholding occurred. Three things make quantifying economic withholding difficult:

- Any generator with storage makes an inter-temporal trade-off between generating or storing, and that decision depends on their (unobservable) expectations of future outcomes. This is true of the vast majority of NZ generation.
- It is difficult to distinguish between withholding to maintain sufficient fuel for future generation, and withholding to increase the price.
- Since the Pohokura outage there has been less effective capacity in the market as some thermal generation could not access gas at any price, providing less discipline on pricing from other generators. This implies that the market clears at a steep part of the supply curve and hence small changes in behaviour can have a material effect on price. This sensitivity contributes to the difficulties in attributing outcomes to 'fundamental' supply drivers or the exercise of market power.

We would welcome feedback on how to think about these issues and quantify their effects.

5. *Will the Authority release spreadsheets for the data used in the charts and equation fitting in the 'INFORMATION PAPER'?*

We have published further data and the code that underpinned this work, though the analytics were not undertaken in spreadsheets. The regression analysis has been made available on Github: https://github.com/ElectricityAuthority/2021_Competition_review and further code and data for the charts/tables in the Information Paper is on EMI: https://emi.ea.govt.nz/Wholesale/Datasets/_AdditionalInformation/SupportingInformationAndAnalysis/2021/20211115_WaterValuesFor2016To2021CompetitionReview. Note that some information is confidential and cannot be distributed by the Authority.

6. *Will the Authority provide briefings and opportunities to ask questions about the analysis techniques used in Appendixes A to E of the 'INFORMATION PAPER'?*

The Authority has been holding follow up one-on-one meetings to discuss technical issues. Please email us to arrange such a meeting if required, reviewconsultation2021@ea.govt.nz.

7. *Will the Authority issue a list of consultation questions that expands on the statement 'feedback on our analysis, including the indicators used.' To a level of detail that is comparable to questions for the options?*

To avoid any potential confusion, we have released an expanded set of questions that will provide greater clarity around the types of feedback we are seeking on the Information Paper. (See Appendix H in https://www.ea.govt.nz/monitoring/enquiries-reviews-and-investigations/2021/wholesale-market-competition-review-2/consultations-2/.) Specifically, we are seeking feedback on the completeness of the set of indicators, further evidence stakeholders have to inform the Review, what the observations in the Review imply the Authority's work programme, and possible solutions.

8. *Following on from the prior question, a topic of particular interest to MEUG is identifying and implementing useful metric to monitor aggregate sector economic profit trend. Can the Authority publish the letter sent to the 4 largest suppliers requesting information in terms of section 46 of the Act, the data provided by suppliers to that request and other information used by Concept for the profitability analysis in the 'INFORMATION PAPER', and the analysis? The 42 questions in Appendix A of the 'DISCUSSION PAPER' do not include a request for feedback on the profitability analysis in the 'INFORMATION PAPER.' Is this consultation an opportunity for feedback on the profit analysis or should we engage separately with the Authority?*

The data used for the Authority's analysis of profitability is confidential. We have made available the blank spreadsheet template (Template-profitability-request-Question-8.xlsx) that we used to obtain this non-public information from the generators. See https://www.ea.govt.nz/monitoring/enquiries-reviews-and-investigations/2021/wholesale-market-competition-review-2/questions-and-answers/.

The profitability analysis is one of the indicators used in the Information Paper, so we expect feedback as part of the submission process for the Information Paper. The Discussion Paper is concerned solely with inefficient price discrimination, and does not relate to the profit analysis in the Information Paper.

We are happy to receive feedback on the economic value added analysis that MEUG has undertaken for Meridian and any additional analysis. We would appreciate it if the methodology used could be described in sufficient detail to make it possible for others to replicate. We would also welcome submissions on the policy implications from this analysis, both in isolation and in the context of our review.

9. *The EA comments in the 'INFORMATION PAPER' about investment in generation include 'A reasonable number of signalled projects remain unbuilt, but only a small number of projects seem likely to proceed to the commissioning stage.' and 'The total quantity of definitely committed investment projects is not enough to replace existing thermal generation. And at least 75 percent of this committed generation is from generator–retailers.' These comments seem to be based largely on an interview-based analysis completed by Concept Consulting for the Authority.*

   Does the Authority intend to model scenarios for the potential effect of this outlook for generation investment on generator incentives and capacity for economic withholding in the short to medium term?

MDAG are looking at the transition path to 100% renewables, and the implications for market outcomes. (See also the Authority's discussion paper on security and resilience. https://www.ea.govt.nz/development/work-programme/risk-management/future-security-and-resilience-project/consultations/#c19038.) Staff are happy to discuss near- and longer-term incentives and would welcome feedback on these issues in submissions.

10. *Has the Authority compared the comments on the short-term outlook for generation in the Wholesale Market Review with the generation investment rules used in the TPM CBA modelling?*

The cost-benefit analysis of the TPM has a 28 year horizon. In contrast, the Review surveyed current and near-term intentions.

11. *My reading of the Wholesale Market Review Information Paper is that the $850m per annum estimate is a wholesale price-only figure, ie, it does not take into account the impact of the increase in transmission charges on other customers if Tiwai exited. If you could provide a wholesale-only and a wholesale + transmission comparison that would be helpful.*

The $850m in the wholesale market review is solely based on the expected impact on wholesale prices (estimated from movements in futures prices) and does not take into account the effect on transmission costs in the event of an NZAS exit. These effects would be additional. We have not calculated a breakdown on how such transmission costs would be reallocated across non-NZAS consumers.

To give a sense of scale refer to the transmission pricing methodology (TPM) analysis of transmission charges – see the last row of the table excerpt below, from TPM-Proposal-Reasons-Paper-Appendix-B-Indicative-Prices-Transpower.pdf (This pdf is a summary of the spreadsheet "Indicative-Pricing-stakeholder-information-Transpower-v2', which can be found on the Authority's TPM webpage: https://www.ea.govt.nz/development/work-programme/pricing-cost-allocation/transmission-pricing-review/.)

The current annual transmission charges for 2021/22 are compared with indicative charges under the proposed new TPM (if it applied in 2021/22). Note that we do not have indicative charges for future years.

7 Indicative total charges compared with status quo charges

56. Table 3 and figures 6 and 7 below show how the indicative charges for the 20/21 pricing year compare with the status quo i.e. the charges our customers have received for the current pricing year

Table 3 Indicative total charges compared with the status quo

Customer	Status Quo ($m pa)	Proposed ($m pa)	$ Change ($m pa)	% Change
Vector Limited	172.11	179.89	7.78	5%
Powerco Limited	92.21	81.28	-10.92	-12%
Meridian Energy Limited	80.94	66.63	-14.31	-18%
Orion New Zealand Limited	61.60	53.50	-8.10	-13%
Wellington Electricity Lines Limited	54.37	46.27	-8.11	-15%
NZ Aluminium Smelters Limited	58.32	44.70	-13.62	-23%

Note also that the transmission costs if NZAS exited would affect consumers but do not directly affect the incentives for generators (ie, the revenue they earn through the wholesale market from generating electricity).

12. *Are you able to provide a breakdown of the $850m by region eg, what is Auckland's share, and what is Invercargill's share? And what is the North Island v South Island share?*

Based on the price changes observed in futures for OTA and BEN we computed that, over three years:

- North Island consumers' wholesale electricity costs would decrease by approximately $1539.4m if NZAS exited
- South Island consumers' wholesale electricity costs would decrease by approximately $1049.9m if NZAS exited
- The total over 3 years is $2589.3m or approximately $863m/year.

The volumes were based on the quarterly profile of 2019 demand, using the futures prices for 2021, 2022, and 2023. The price changes were derived from the August and January NZAS exit/stay announcements. (We have not made any adjustment for load growth.)

These amounts reflect wholesale spot prices, and the exact effect on consumers would depend on the contractual and hedging arrangements that they have in place.

We did not compute Auckland-specific or Invercargill-specific wholesale charges. Using OTA and BEN futures prices is an approximation given nodal pricing. FTRs can be used to adjust those futures prices to approximate an INV (Invercargill) forward curve.

We have two additional observations.

i) For generators, the revenue implications from non-NZAS consumers, arising from wholesale price movements, appear to out-weigh the direct revenue implications of the Tiwai contracts. It is this revenue effect across their portfolio of customers that creates the incentives we investigate in the Discussion Paper.

ii) Generators without any contractual relationship with NZAS also have a financial incentive for NZAS to stay in the market.

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13. *How should the traffic lights be interpreted in the Information Paper (pp 8-12)?*

We have taken a structure-conduct-performance approach to assessing wholesale market competition. In this framework 'good' market structure is expected to discipline participant conduct, which is then expected to result in 'good' market performance (reliable energy at low cost).

Table 2 in the Information Paper discusses overlapping, related indicators of each structure-conduct-performance component.

We interpret the 'traffic lights' as representing an assessment of the market (during the review period) against the indicator described in the '**Indicators used**' column –

a) Green: the indicator is consistent with what would be expected in a competitive market.
b) Amber: the indicator raises qualified concerns about the competitiveness of the market.
c) Red: the indicator raises the potential for serious concerns about the competitiveness of the market.

The traffic light is not intended to reflect

- An assessment of the 'reliability' or 'usefulness' of the indicator.

To some degree, the traffic light colour for a given indicator may reflect

- That the 'level' of an indicator is/may-be/is-not of concern. The level of an indicator is not entirely divorced from the 'change' in an indicator relative to the pre-review period.
- Concerns about the potential exercise of market power
- An assessment that the indicators is/may-be/is-not consistent with 'what we would expect to see in a competitive market'.

We would welcome feedback on the indicators and how they should be interpreted. Consultation questions were added to the information paper a few weeks ago to make that more explicit (appendix H, para 5.225 p. 142), as previously notified in the Authority's weekly Market Brief. See the updated paper here: [Monitoring-Review-of-structure-conduct-and-performance-in-the-wholesale-electricity-market-updated-paper.pdf (ea.govt.nz)]